

CITY OF FRESNO

FRESNO METROPOLITAN WATER RESOURCES

MANAGEMENT PLAN PHASE III REPORT

IMPLEMENTATION PLAN EXCERPTS

INTRODUCTION

FACILITIES PLAN

INSTITUTIONAL ALTERNATIVES

INSTITUTIONAL PLAN



REPORT TO THE CITY COUNCIL

AGENDA ITEM NO. 2:45 pm
COUNCIL MEETING 4/9/96

APPROVED BY

February 1, 1996

DEPARTMENT DIRECTOR

CITY MANAGER

FROM: WILLIAM T. HETLAND, Director of Public Utilities
Department of Public Utilities

BY: ^{MRM} MARTIN R. McINTYRE, Water System Manager
Department of Public Utilities/Water Division

SUBJECT: CONSIDERATION OF FRESNO METROPOLITAN WATER RESOURCES
MANAGEMENT PLAN (PLAN) AND CERTIFICATION OF
ENVIRONMENTAL IMPACT REPORT STATE CLEARINGHOUSE
NUMBER 95022029.

ADOPTION OF THE FOLLOWING RESOLUTIONS:

1. EXHIBIT C-RESOLUTION CERTIFYING FINAL ENVIRONMENTAL
IMPACT REPORT NO. 95022029
2. EXHIBIT F- RESOLUTION ADOPTING THE PLAN

SUMMARY

- Fresno's existing water supply system is inadequate to reliably meet future water demands.
- A comprehensive Metropolitan Water Resource Management Plan and associated EIR have been prepared to ensure a safe, reliable, and affordable water system for Fresno.
- Through the year 2010, the Plan adds only minor costs and rate increases above the existing water supply system costs.
- Staff is recommending Council adoption of the Plan and certification of the EIR.
- No new debt financing for facilities is necessary until 2001.
- Any fee and rate increases or facilities associated with the Plan will be subject to additional Council review and action.

INTRODUCTION

We are at a critical juncture. The City of Fresno has developed from a small railroad settlement to a burgeoning metropolis with over half-a-million people. The economy and public health of our community is dependent on a safe, reliable and affordable water supply. The viability of our water supply system is threatened by groundwater contamination, stringent drinking water standards and increased competition for limited water supplies. These factors have combined to create unprecedented impacts on communities throughout the state. Fresno is no exception.

Presented to City Council

Date

2/6/96

Disposition

Cont'd to 3/12/96

10:00 AM

MANAGEMENT PLAN

February 6, 1996

Page 2

Well closures, low pressures, and growth into areas with uncertain water supplies have had an adverse economic impact on the community. Fortunately, Fresno currently has adequate total water resources and some of the lowest water rates in the entire state. However, failure to implement changes in water resource management practices and water supply infrastructure will imperil the water system reliability and lead to higher costs.

A carefully prepared and consistently implemented, long-range water management plan is essential to Fresno's future prosperity and implementation of the 1994 General Plan. It is such a plan that staff now presents to the City Council as Exhibit A.

METROPOLITAN WATER SUPPLY PLANNING PROCESS

Recognizing the vulnerability of the City's current water supply system, in 1990 the Council directed staff to prepare a long-range water supply plan. With the assistance of water supply consultants noted for both local and national experience, staff initiated a multi-year analysis of water resources and water supply alternatives. This analysis provided the basis for development of the Fresno Metropolitan Water Resources Management Plan (hereafter referred to as the Plan or Management Plan).

To ensure that the Plan was inclusive and would benefit from broad expertise, Fresno invited the City of Clovis, Fresno County, the Fresno Irrigation District, and the Fresno Metropolitan Flood Control District to participate in preparation of the Plan. Representatives from these agencies comprised the Technical Advisory Committee (TAC) which guided the planning process and worked to develop consensus on key Plan issues. The Health Department, Regional Water Quality Control Board, Fresno Chamber of Commerce, and CSU Fresno also provided representatives who attended each of the fifteen TAC workshops and the four public involvement sessions.

The multiple agency approach to the Management Plan makes this project more meaningful than a City-only project. The analysis and recommendations of the Management Plan are substantial because they were developed by a multi-agency technical advisory committee. The agencies on the TAC are those that the City will work with to implement the Management Plan. The future facilities and decisions associated with the Management Plan are linked to other local water resource agencies through their assistance in developing the Plan. The goals and objectives of the Management Plan should be more viable because they were developed through a multi-agency consensus process.

The public, governing boards, water professionals from throughout the state, and all identifiable interested parties were invited to participate in the planning process. Four public involvement sessions were held during development of the Plan. Many focused interviews were conducted to

MANAGEMENT PLAN

February 6, 1996

Page 3

ensure issues of concern were addressed. The Plan was also presented to governing boards throughout its development.

Plan Goals

During the initial formation of the Plan, a consensus developed that the principal goal of the Plan is to assure a safe, reliable, and economical water supply system. The three elements of the goal are more fully described as follows:

- ✓ **SAFE:** Assure that the water supply can meet current and future drinking water standards and protects public health.
- ✓ **ECONOMICAL:** Provide a blend of water sources and technologies to implement goals in a cost-effective manner.
- ✓ **RELIABLE:** Assure that Fresno's water supply is resilient to well closures and periods of drought and provides adequate supplies for the future.

Refinements to the goal resulted in the following Plan objectives:

- ✓ Provide safe, adequate, and dependable water supplies to meet the future needs of the metropolitan area in an economical manner,
- ✓ Protect groundwater quality from further degradation and overdraft, and
- ✓ The Plan must be implementable

Water Supply Alternatives

As previously reported to Council, all potential water supply alternatives were evaluated. All water supply elements were screened for consistency with the Plan goals. After an initial screening, three facility alternatives were subjected to detailed analysis. A single preferred alternative was identified as best suited to satisfy the Plan's goals. The proposed Plan reflects this alternative.

Institutional Arrangements

Various institutional arrangements were assessed. A Municipal Utilities Agency serving both Clovis and Fresno was identified as the preferred alternative. Some representatives on the TAC recommended a Joint Powers Authority. Subsequent to completion of the Institutional Plan, Clovis elected to develop an independent Metropolitan Water Resource Management Plan. Clovis has remained supportive of the Plan's goals for improved regional water resource management and has continued to participate in the TAC.

At a previous Plan workshop, certain council members opposed the concept of a municipal

utilities district. Notwithstanding, efforts to sustain comprehensive water management will continue regardless of the institutional model followed by Fresno.

Management Plan Organization

The Plan employs a comprehensive view. It was developed in three phases and each can stand alone as an analysis and resource document. Together, they describe a systematic analysis of past, present, and future characteristics of the water supply. All three volumes of the Plan (Phases I, II and III) have been previously delivered to the Council and the City Clerk and are incorporated herein by reference. The Phase III report (the Implementation Plan) is provided as Exhibit A to this agenda report. The description of these three phases are:

- ✓ Phase I *Assessment of the Existing Water Supply System.* All elements of existing water systems including facilities, hydrologic setting, institutional framework, and operations and management practices were assessed.
- ✓ Phase II *Analysis of Water Supply Alternatives.* Planners analyzed alternative water supply configurations necessary to meet water demands anticipated over the next 60 years.
- ✓ Phase III *Implementation Plan* (attached as Exhibit A). An Implementation Plan and schedule were developed, institutional alternatives were evaluated, and a regional agency was identified as the most suitable entity for management of the FMA water supply.

A summary of findings for Phase I and II are located on pages 1-7 through 1-9 of Phase III. The most significant conclusion of Phase I is that the existing water supply and delivery systems are not adequate to meet Fresno's long-range planning goals.

The Relationship Between the Management Plan and General Plan

The Management Plan under consideration is not intended to be administered in the same manner as land use plans. The Plan does not have a land use element or related policies. Instead, it is designed to be responsive to both the General and Specific Plans of Fresno. For cost-estimating purposes, certain facilities are spread over three sequential planning horizons. These time periods were developed to illustrate recommended schedules for Plan implementation. Construction of the recommended facilities will be governed not by an artificial time line but by milestones such as actual population growth and the location of water demands.

In regard to the primary service area of the Plan, this was identified as the 1984 General Plan boundary. These boundaries can be adjusted in the future at Council's direction to address the needs of an expanded or modified Sphere of influence.

MANAGEMENT PLAN

February 6, 1996

Page 5

The Plan findings and conclusions may impact future land use decisions. Ultimately though, the staging of water supply, treatment, and distribution facilities will be governed by growth of the city as determined by the General Plan. Thus, the Management Plan does not conflict with the General Plan. The configuration and cost of the facilities it projects remains dependent upon the demand associated with the General Plan. As was the case before adoption of the Plan, land use decisions by the Council will be guided in part by the availability of water resources and cost of infrastructure.

Growth Estimates

Because the General Plan and the Management Plan have been analyzed and written as separate plans, each resulted in independent assumptions relating to the projected population growth in their project areas. For purposes of approximating the timing of certain facility needs, the Management Plan assumes a 2.9% growth rate until the 2001, and a 2.5% rate until the 2010. The actual rate of growth will determine the timing of facilities and financing needs. Variation from the assumed growth rates has no bearing on the viability of the Management Plan unless average City-wide density is sharply increased, in which case, a decrease in consumptive water use or an increase in water supplies would be required. If adopted, the Management Plan facilities inventory and financial projections will be amended as conditions dictate.

PLAN MODIFICATIONS

As indicated in the Plan documents, keeping the Plan current will require periodic updates. It is anticipated that an annual update and formal review every five years would satisfy this objective. Recently, a number of issues have had an effect on the Plan. The net affect of these issues is a major reduction in Plan costs between 1996 and 2010.

■ *DBCP Settlement*

The City settled its DBCP claim in May, 1995. The current and future proceeds from this settlement will offset most of the costs associated with DBCP treatment and improve the cost-effectiveness of groundwater development in southeast Fresno through the 2010.

■ *Bond Issue*

Water Quality Remediation Bonds were sold in 1995. Proceeds from this issue have already funded some of the Plan facilities. Proceeds are available to fund additional required facilities.

■ *Proposition 44 & 82 Projects*

Low-interest state loans have funded certain Plan facilities—primarily recharge and plume management.

MANAGEMENT PLAN

February 6, 1996

Page 6

- *Continued Development of Groundwater*
During the past year, additional wells have been developed to meet new demands. Development of this additional supply satisfies some of the new water demands were identified in the Plan.
- *Implementation of Facility Elements*
Certain Plan facilities have already been funded or constructed, such as chlorination facilities, storage tanks, and wellhead treatment facilities.
- *Elimination of Water Meters*
At Council direction, water meters were eliminated from the Plan. This action increased the number of water supply facilities required, but eliminated the cost of retrofitting meters.
- *Decreased Water Demand*
The Water Division's telemetry system has allowed narrower pressure control which has resulted in a decrease of per capita water consumption from 313 to 260 gallons per day per person.
- *Moving Facilities out on the Planning Horizon*
The DBCP settlement allows certain facilities to be spread out further along the planning horizon, decreasing near-term costs.
- *Elimination of Southwest Storage Tank*
Recent drilling activities have demonstrated that southwest wells will likely be productive enough to eliminate the need for water storage tanks in this area.
- *Political and Regulatory Environment*
Changes in these areas have decreased sufficiently to permit slowing the pace of implementation without sacrificing significant reliability.
- *Institutional Arrangements*
Action on the previously recommended institutional changes (formation of a municipal utilities district) have been postponed due to the concerns of some council members. A blue ribbon committee could be formed to further assess institutional alternatives and report back to Council.

PLAN IMPLEMENTATION

The three Phases of the Metropolitan Water Resource Management Plan as amended by Attachment E, estimate the costs and implementation schedule for the Plan. Implementation of

MANAGEMENT PLAN

February 6, 1996

Page 7

each facility project, as well as all rate and fee increases, will be subject to future Council review and approval. Council review will occur prior to all future budget and impact fee actions. In addition, each facility project will be subject to council approval of appropriations as well as associated contracts.

As needed, routine Plan updates will be developed and submitted for Council review. Adoption of the Plan does not obligate the Council to approve any specific facilities or rate increases at this time.

FINAL ENVIRONMENTAL IMPACT REPORT

(Exhibit B)

This document has analyzed the environmental effects of each of the alternatives and discusses ways to mitigate or avoid the effects. Environmental effects resulting from any of the alternatives (with the exception of the "No Project Alternative") can be approved with adequate mitigation measures to fully address the environmental impacts. This is due in large part to the influence of the General Plan. The facilities delineated in the Management Plan will be proposed, approved, financed, and constructed in accordance with the planned growth of the General Plan. Further, these facilities will also be subject to project specific environmental analysis and approval.

RESOLUTION CERTIFYING THE FINAL ENVIRONMENTAL IMPACT REPORT

(Exhibit C)

Approval of this document certifies that the environmental documentation has been prepared in accordance with the California Environmental Quality Act (CEQA).

MITIGATION MONITORING PROGRAM

(Exhibit D)

Pursuant to CEQA, this document outlines the mitigation measures listed in the EIR, the parties responsible for their implementation, and the points when they are implemented. This program is approved as part of the EIR certification resolution.

FINANCIAL ANALYSIS

(Exhibit E)

As discussed previously, various factors have had a significant impact on the Plan. Issuance of bonds for water infrastructure, coliform compliance, and the settlement of the DBCP litigation have all had a profound effect on financing and staging water improvements. In light of these developments, the financial analysis for the Management Plan has been modified. Exhibit E replaces Chapter 5 of the Phase III report.

MANAGEMENT PLAN

February 6, 1996

Page 8

RESOLUTION APPROVING THE PLAN (Exhibit F)

Approval of this resolution will provide a master plan to guide development and management of water supplies.

THE ISSUE

1. Shall the Council certify by resolution that the environmental impact report was prepared in accordance with CEQA, adopt the Fresno Metropolitan Water Resource Management Plan, and direct staff to return with a detailed funding plan for 1996-2000 facilities?

RECOMMENDATION

The Department of Public Utilities recommends that the Council take the following actions:

1. Adopt the resolution attached as Exhibit "C" certifying that Final Environmental Impact Report No. 95022029 was completed in compliance with the CEQA guidelines.
2. Adopt the resolution attached as Exhibit "F" adopting the Fresno Metropolitan Water Resources Management Plan.
3. Direct staff to prepare a detailed funding plan for facilities to be constructed between 1996 and the year 2000.
4. Provide direction to staff regarding formation of a blue ribbon committee for the purpose of further assessing institutional alternatives and reporting their findings and recommendations to Council.

FISCAL IMPACT OF RECOMMENDATION

The recommendation in and of itself will not result in a fiscal impact. If adopted, the Management Plan simply provides a framework to comprehensively address water resource and supply issues. Approval of the Management Plan does not impair Council's authority to act on future capital projects or rate adjustments. It is likely that in the absence of the Plan, that these same projects would be brought to Council in an inefficient, piecemeal fashion.

Although the facilities in the Management Plan are expected to cost \$ 111,000,000 through the year 2010, almost all of these capital expenditures would be incurred without adoption of the Plan. No new debt financing for facilities is necessary until 2001.

MANAGEMENT PLAN

February 6, 1996

Page 9

Attachments:

Exhibit A	Phase III Report: Implementation Plan
Exhibit B	Final Environmental Impact Report No. 95022029
Exhibit C	Resolution Certifying Final Environmental Impact Report No. 95022029
Exhibit D	Mitigation Monitoring Program
Exhibit E	Financial Analysis
Exhibit F	Resolution Adopting the Plan

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FRESNO METROPOLITAN

Water Resources

MANAGEMENT PLAN

Phase III Report

Implementation Plan

CH2M HILL

May 1994



CONTENTS

	<u>Page</u>
1. INTRODUCTION	1-1
Study Process and Schedule	1-2
Planning Horizons	1-4
Study Objectives	1-5
Study Area	1-5
Phase I Summary	1-7
Phase II Summary	1-9
Phase III Study	1-10
2. FACILITIES PLAN	2-1
Capital Cost Estimates	2-4
Allocation of Costs	2-4
Operation and Maintenance Costs	2-7
Additional Required Facility Studies	2-7
3. INSTITUTIONAL ALTERNATIVES	3-1
4. INSTITUTIONAL PLAN	4-1
Implementation Task Force	4-1
Major Subjects for New Inter-Agency Agreement	4-2
5. FINANCING OPTIONS AND WATER RATE IMPACTS	5-1
Summary of Major Conclusions	5-1
Project Implementation Costs	5-2
Cost Allocation: Who Pays for the Plan?	5-8
Sources of Financing	5-13
Recommended Financing Plan	5-14
Impacts of the Water Resources Management Plan on Local Water Rates ..	5-19
6. IMPLEMENTATION SCHEDULE	6-1
Appendix A. FACILITIES PLAN SENSITIVITY TO CHANGING STANDARDS	
Appendix B. INTER- AND INTRA-AGENCY RATES AND FEES	
Appendix C. INSTITUTIONAL ARRANGEMENTS FOR RESOURCE MANAGEMENT	
Appendix D. PROJECT COSTS	
Appendix E. WATER SERVICE IN THE NORTHEAST AREA	

CONTENTS

	<u>Page</u>
TABLES	
2-1 Water Supply Summary	2-3
2-2 Capital Cost Estimates	2-5
2-3 Capital Cost Allocation (%)	2-8
2-4 Capital Cost Allocation (\$1,000)	2-10
2-5 Operation and Maintenance Costs	2-10
5-1 Comparison of Water Rates and Impact Fees for Selected California Cities .	5-12
5-2 Sources of Financing for the Water Resources Management Plan	5-15
5-3 Schedule for Financing Used in the Rate Impact Analysis	5-20
5-4 Annual Debt Service Obligations Assumed in the Rate Analysis	5-20
5-5 Potential Rate Impacts of the Plan for Fresno	5-23
5-6 Potential Rate Impacts of the Plan for Fresno (Assuming 4% Inflation)	5-25
5-7 Water Rates and Charges for a SFR Under Alternative Scenarios	5-27
6-1 Implementation Milestones	6-1

FIGURES

1-1 Project Schedule	1-3
1-2 Study Area	1-6
2-1 Facilities Plan	2-2
2-2 Capital Cost Estimates	2-6
2-3 Capital Cost Allocation	2-9

CONTENTS

	<u>Page</u>
5-1 Cost of the Plan	5-3
5-2 Cumulative Plan Costs in 1994 Dollars	5-6
5-3 Annual O&M Costs in 1994 Dollars	5-7
5-4 Relationship of Management Plan Costs and User Charges	5-10
5-5 Fresno Average SFR Monthly Water Bill	5-11

Chapter 1 INTRODUCTION

This report is the third and final in a series of reports describing the development of a Water Resources Management Plan (Plan) to meet the current and long-range water needs of the Fresno Metropolitan Area (FMA).

Previous studies have addressed related issues, but recent changes in groundwater quality and drinking water regulations and a renewed interest in the area's long-term water supply have necessitated updating and expanding those studies. The last study was partially funded by an Environmental Protection Agency (EPA) grant under Section 205(j) of the Clean Water Act and is generally referred to as the "205j study" (Fresno County, 1986). The 205(j) study updated the "208 study" (Fresno County, 1979), which focused primarily on the protection of groundwater quality and short-term water supplies (through the year 1995).

This water resources management plan has been a multi-agency effort to project urban water needs and supplies to serve the Fresno Metropolitan Area through the year 2050. The main reasons for the distant planning horizon are the advanced lead time required to implement major water resources projects and documentation to support renewal of the City of Fresno's Central Valley Project (CVP) contract. Projections of growth and water demands to such a distant horizon are difficult at best. (An analogous situation is a water resources planner in 1934 trying to predict conditions in 1994.) Projections are being made, however, and the Plan should be updated periodically to incorporate new data and extend the planning horizon.

Historically, the FMA has relied solely on untreated undisinfected groundwater as a source of potable water. Recent data indicate that at least 44 of the 352 public water agency wells in the FMA have already been deactivated because of groundwater quality degradation and stringent drinking water regulations. Major plumes of groundwater contaminants occur throughout the study area and will continue to migrate into the Fresno Metropolitan Area. Most of the agricultural contaminants in the FMA groundwater are the consequence of routine pesticide application over thousands of acres of farmland. Commercial and industrial contaminants are due primarily to poor storage and handling practices, careless or improper disposal, and leaking underground tanks.

Drinking water regulations are becoming more stringent. The requirements of these regulations will affect both groundwater and surface water systems. For groundwater served communities such as Fresno, water from existing potable water wells may require disinfection and additional treatment before being made publicly available. Such treatment may consist of disinfection, corrosion control, and the removal of radionuclides and organic chemicals. Many of the well sites in the FMA are not adequately sized, located, or configured to accommodate the anticipated wellhead treatment systems required.

Potable water distribution systems in the FMA were developed based on dispersed wells and a local distribution network of relatively small diameter water mains. Deactivation of wells due to the presence of organic and inorganic contaminants has created local areas of low pressure during peak demand periods, limiting the ability of the system to provide fire protection and causing customers to complain.

These water quality problems have manifested themselves in a short period of time, triggered by increasingly stringent water quality regulations. The funding and implementation of remedial measures is time consuming, resulting in virtual building moratoriums in some portions of the FMA.

Study Process and Schedule

A technical advisory committee (TAC) was formed in 1984 during a cooperative water planning effort. The TAC, composed of the area's five major water agencies including the Cities of Fresno and Clovis, Fresno County, the Fresno Metropolitan Flood Control District (FMFCD), and the Fresno Irrigation District (FID), prepared a work plan and, in August of 1991, selected CH2M HILL to develop the Fresno/Clovis Metropolitan Water Resources Management Plan.

The Plan comprises three phases originally scheduled for completion over a 1-year period, as shown on Figure 1-1. During the latter part of Phase III, however, the Plan completion was delayed to allow time for newly elected officials in both Fresno and Clovis to become informed relative to the Plan and the planning process. Following deliberations and discussions among various representatives of the two cities, Clovis elected to pursue implementation of the Plan separately from Fresno. As a result, the Plan's completion has been delayed and this Phase III Report is for the Fresno Metropolitan Area, only. The City of Clovis intends to develop a separate implementation plan. A suggested implementation schedule for Fresno is included as Chapter 6 of this report.

The Plan's three phases are described as follows:

- **Phase I--Existing Water Supply System Assessment.** This phase consisted of assessing elements of the existing system, including facilities, data bases, hydrologic setting, institutional framework, and operational and management practices.
- **Phase II--Water Supply Alternatives.** This phase consisted of identifying and screening alternative configurations of water supply elements that would accomplish the goals of the Plan. Based on the screening process, a preferred alternative was recommended.
- **Phase III--Implementation Plan.** This phase consists of defining the process, schedule, financing plan, institutional arrangements, and responsibilities for implementing the preferred plan; and preparing a programmatic Environmental Impact Report (EIR) for that plan.

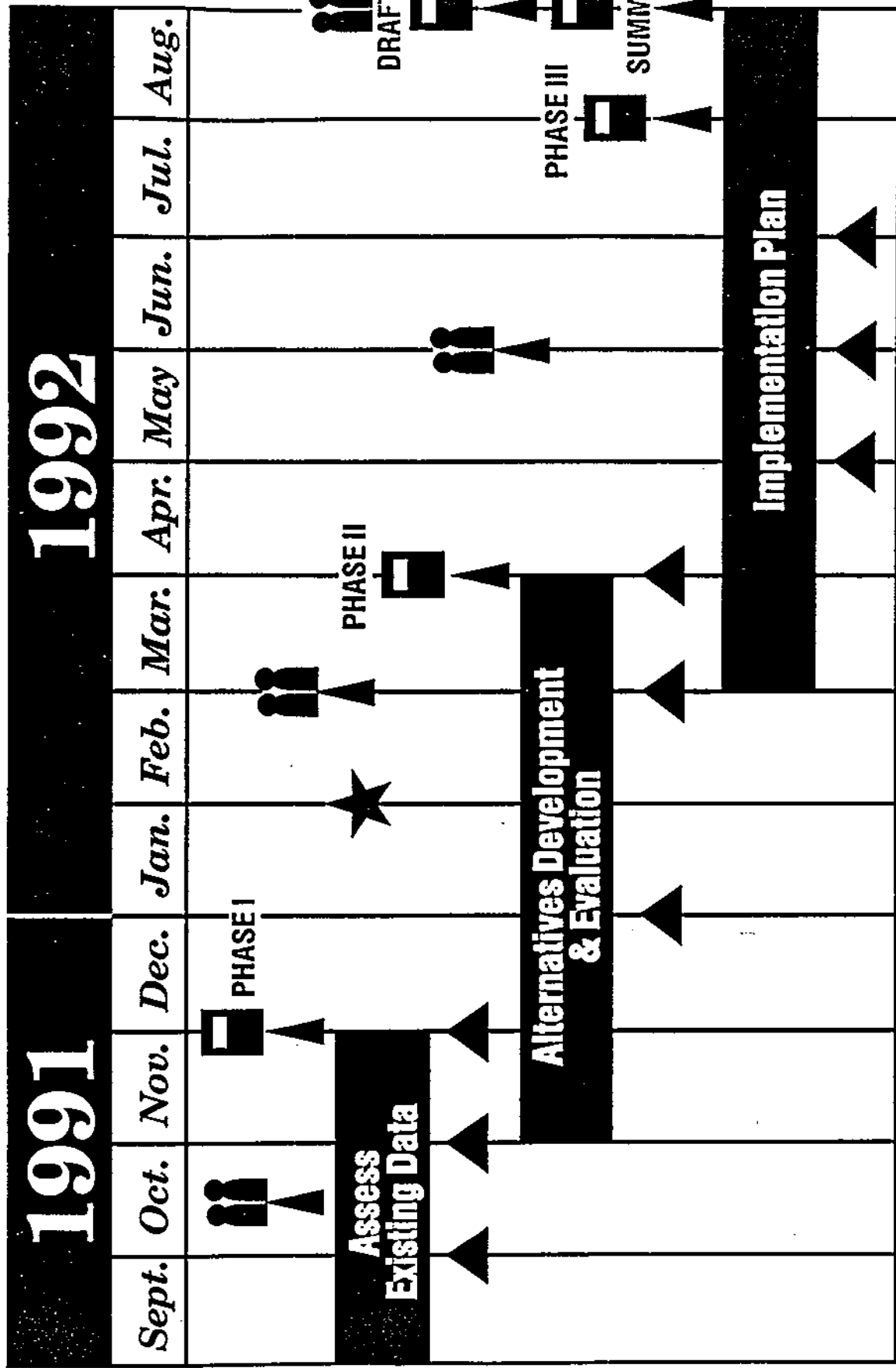


FIGURE 1-1
PROJECT SCHEDULE
CHM/HILL

Each study phase has been summarized in a report. This report presents the results of the third study phase. An abbreviated summary report of the entire study is being prepared for wide public distribution.

Integral to the study was a four-part public involvement program, which was designed to:

- Apprise the public of the Plan schedule, goals, and objectives
- Provide the public with informational updates at appropriate milestones
- Solicit input from the community during Plan development
- Disseminate information regarding water supply issues, the range of resource alternatives considered, and the recommended alternative for providing an adequate water supply to the area

Planning Horizons

Three planning horizons have been used in the study:

- **1994-2000—Project Horizon.** At this planning level, major water supply projects (elements) have been discussed to the degree of detail necessary for incorporation into a 5-year capital improvement program. A separate project-specific engineering feasibility study and environmental document will still be required by the owning agency prior to the construction of each project.
- **2001-2010—Program Horizon.** The second planning horizon corresponds roughly with the existing Fresno General Plan horizon (in 2004) and the expiration of the City of Fresno's existing water contract with the U.S. Bureau of Reclamation (USBR) in 2006. Major water supply projects for this time frame have been discussed in less detail than projects discussed for the Project Horizon stage. Site-specific locations of improvements have not been identified—only the concepts, general locations, and approximate costs.
- **2011-2050—Policy Horizon.** The third planning horizon corresponds roughly with a projected second renewal of the City of Fresno's USBR contract, assuming a 40-year contract renewal in 2006 (it has recently become apparent that a 40 year contract renewal is unlikely). A water supply program for this time frame, focusing on objectives, policies, institutional changes, and concepts, has been outlined.

Study Objectives

The principal objectives of the overall water planning effort, as stated by the TAC, were to:

- Provide safe, adequate, and dependable water supplies to meet the future needs of the metropolitan area in an economical manner
- Protect groundwater quality from further degradation
- Provide a Plan that can be implemented

Study Area

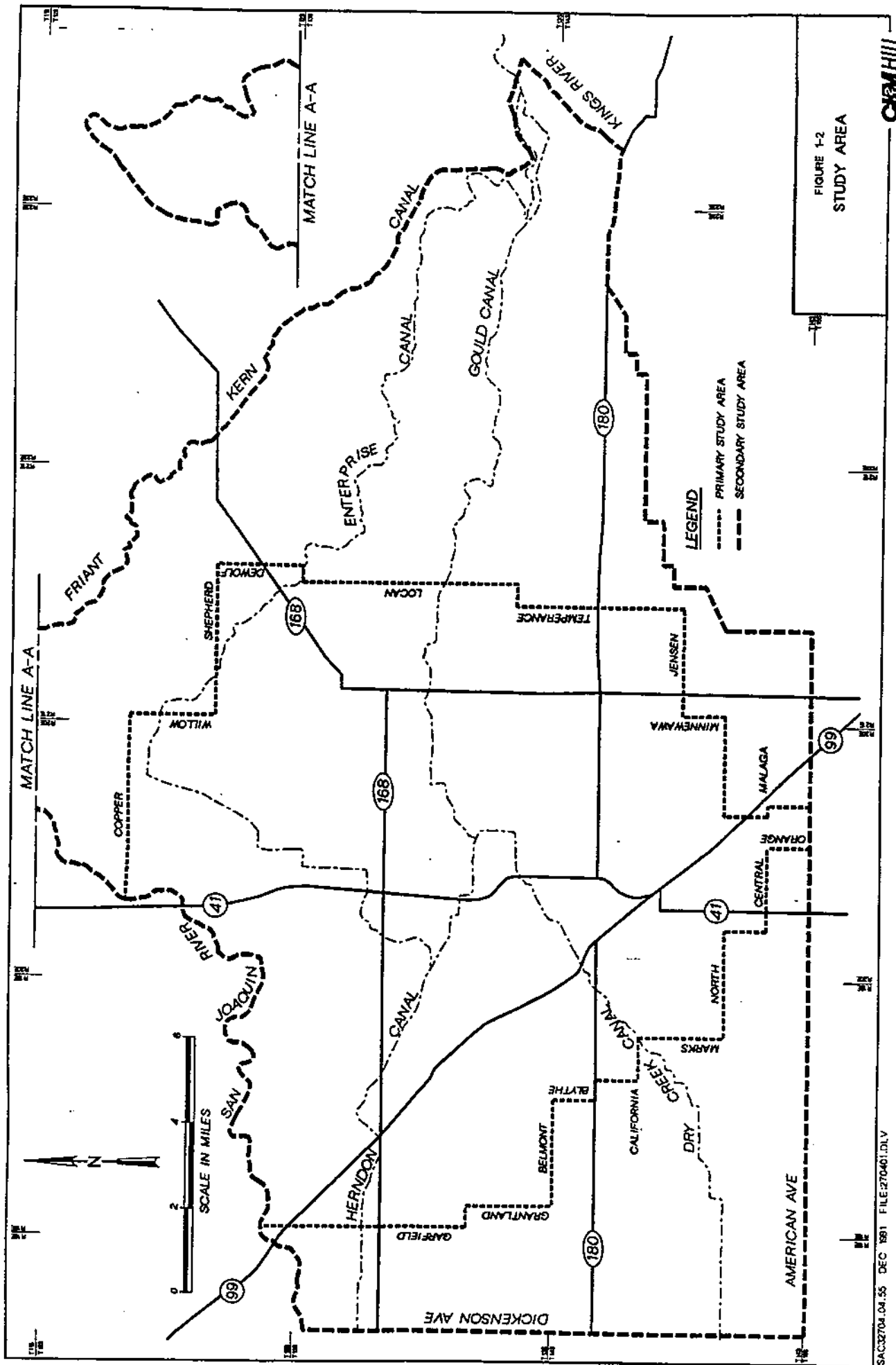
The metropolitan area, including Clovis, is home to some 500,000 people and is growing at a rate that is faster than California as a whole and much faster than the nation.

Two study boundaries have been used in this project and are shown on Figure 1-2. The primary study boundary encompasses the currently adopted spheres of influence of the two cities and corresponds with the project and program planning horizons; this area is often referred to as the Fresno/Clovis Metropolitan Area. The secondary study boundary was set large enough to provide a valid analysis of the regional water budget and encompass the potential growth of that portion of the metropolitan area within Fresno County up to the policy planning horizon. Furthermore, the secondary study boundary corresponds roughly to the 208 and 205j study boundaries (Fresno County, 1979; Fresno County, 1986), except for minor adjustments on the southeast to more closely follow the FID boundary and the expansion of the western boundary to Dickenson Avenue. For purposes of the Phase III Report for the Fresno Metropolitan Area, only, the study boundaries remain unchanged. This approach is considered to be conservative and should have little impact on the future water quality aspects since the two cities intend to implement the overall management aspects of the Plan, albeit separately.

The larger metropolitan area could grow northward into Madera County, north of the San Joaquin River, according to city and county planners. Although this study did not address that contingency explicitly, the sensitivity of Plan performance to growth north of the San Joaquin River was assessed in general terms during Phase II of the study.

Sources of water within the study area include surface water from the Kings River, the San Joaquin River, several intermittent streams (Fancher, Redbank, Dry, Dog, and Mud Creeks), groundwater, and rainfall. The mean annual precipitation in the study area varies between 9 and 13 inches, which is about one-half of the mean annual precipitation received in coastal areas. Local rainfall alone, if fully captured, would meet less than 20 percent of the area's needs.

The agricultural lands within the study area are irrigated largely from surface water sources, although groundwater is relied on more heavily during periods of below normal



precipitation. Growers use the groundwater basin as a storage reservoir by applying excess water during times of ample supply to induce percolation, and then withdraw that stored water during droughts. The urban area relies completely on the groundwater basin for its domestic water supply. The cities of Fresno and Clovis and the FMFCD each actively operate recharge basins to replenish the aquifer with surface water, but the management of groundwater quality presents a significant challenge for the future.

Phase I Summary

Phase I, an assessment of the existing water supply systems, has been completed. Following is a summary of the findings and conclusions of the Phase I report.

Current Conditions

- Northwestern hydrogeologic conditions include:
 - High well yields and good recharge capacity
 - Excellent water quality, except for Pinedale TCE plume
- Northeastern hydrogeologic conditions include:
 - Lower well yields and recharge capacities relative to the northwestern area
 - Shallow bedrock or an abundance of fine-grained strata
 - Large areas of DBCP contamination
- Southeastern hydrogeologic conditions include:
 - Widespread DBCP, some EDB, and manganese
 - Contaminated water being drawn into the urban pumping depression
 - Low well yields in much of the area
- Southwestern hydrogeologic conditions include:
 - Some DBCP and nitrate contamination
 - Substantially elevated groundwater levels due to treated sewage effluent disposal
- Distribution systems are based on scattered wells with small connecting grid systems.
- Calculations based on groundwater levels indicate a slight overdraft condition.
- Municipal well capacity has been depleted by well closures resulting from groundwater contamination.

- Under current operations, contaminants will continue to move toward pumping wells.
- If the current trend of well closures continues, pressures will fall below the statutory limit of 20 psi in some localized areas.
- Changing drinking water standards will continue to affect the municipal water purveyors. As a result of the continued movement of groundwater contaminants, many wells will require treatment.
- Treatment requirements may increase with the adoption of future, more stringent, drinking water standards.
- Many well sites are not large enough to accommodate wellhead treatment equipment.

Future Population and Land-Use Projections

- The FMA population will increase from 500,000 (current) to nearly 800,000 by the year 2010.
- Water demand for urban uses is approximately equal to the water demand for agricultural uses when measured on an average per acre basis including both irrigated and fallow land. However, when considering only irrigated acres, agricultural use is greater than urban use.
- The conversion of land from irrigated agricultural to urban use, coupled with conservation, reduces water consumption.
- The ability to support urban growth north of Copper Avenue is marginal using existing FMA water supplies. Growth north of Copper Avenue cannot be supported by simply drilling more local wells. A more effective use of wastewater and groundwater banking options could make available supplies adequate to meet growth projections.
- Assuming Fresno retains its CVP surface water entitlements, water supplies are adequate to meet demands through the year 2050 because, in general, houses are replacing crops which keeps the demand in balance.
- The existing water supply and delivery systems were adequate in the past, but these systems are not capable of meeting the planning goals.
- Water budget calculations for the "existing system" projected into the future show the following:

Water Budget Results				
Element	Acre-Feet Per Year			
	Current	1997	2010	2050
Municipal Pumpage	160,000	158,000	192,000	317,000
Surface Water Entitlement ^a	132,000	151,000	175,000	256,000
Urban Intentional Recharge ^b	48,000	48,000	79,000	167,000
Groundwater Overdraft	10,000	None	None	None
^a Before system losses.				
^b Does not include urban storm runoff or landscape return flows.				

Current Agreements and Their Expiration Dates

- The Cities of Fresno and Clovis have agreements with the FID for the delivery of Kings River water in proportion to their land areas within the FID.
- The City of Fresno's contract for 60,000 acre-feet of Class I water from the USBR expires in 2006.
- The FID's contract for 75,000 acre-feet of Class II water from the USBR expires in 1995.
- The "run-of-the-river" (no reservoir storage) nature of municipal surface water entitlements, if enforced, could have major impacts on the availability of the Kings River allocations for direct municipal use.
- Local agencies within the FMA need to focus on the renewal of USBR contracts for the FID, Garfield Water District and International Water District (1994-1995), and the City of Fresno (2006).
- Fresno should solidify its agreements with the FID to provide equitable long-term commitments of surface water and wastewater.

Phase II Summary

The primary objectives of Phase II of this study were to formulate and evaluate water supply alternatives and then select a preferred alternative. A public involvement and technical screening process was used to accomplish these objectives. Through focused

interviews, workshops, meetings, and public forums, planners provided the public with opportunities to discuss and evaluate water supply elements and alternatives. The technical aspects of the preferred alternative were identified through a screening process that involved over 50 water experts. The preferred alternative includes:

- A small component of treated surface water using 2 new water treatment plants.
- A small component of untreated surface water for large lot landscaping (schools, cemeteries, etc.).
- A conservation plan, which includes a meter retrofit program.
- A large component of groundwater including wells with and without wellhead treatment for removal of pesticides and/or volatile organics. Most of the wells with wellhead treatment will be strategically located to control the migration of groundwater contamination plumes, and are, therefore, called "plume management" wells.
- Intentional groundwater recharge in single-purpose spreading basins and multi-purpose flood control basins to stabilize, and even raise, groundwater levels in the FMA.
- Transmission pipelines that loop the FMA to equalize service, enhance system reliability, and provide the capability to utilize multiple sources of supply at all service locations. This supply flexibility is needed to permit response to service deficiencies resulting from short- or long-term events, such as drought, localized surface water or groundwater contamination, changes in drinking water standards that could render groups of wells unsuitable, and localized system outages.

The capital cost for the preferred alternative is estimated to total \$192 million between 1994 and the year 2000 (1994 dollars).

Phase III Study

This report is one of the three documents identified below to be completed during Phase III.

- Implementation Plan Report
- Summary Report
- Programmatic Environmental Impact Report (EIR)

The implementation plan described in this report was prepared to accomplish the recommendations of the preferred alternative. A detailed cost estimate for the facilities, a

schedule of Plan activities, and a description of the institutional and financial framework necessary to implement the Plan and manage the FMA water resources are also included.

A separately bound summary report will provide an abbreviated description of the three phases of this study for distribution to the public.

The programmatic EIR process and schedule, commencing in late 1994, will propose a formal public hearing with a final EIR being certified in early 1995. Adoption of the Plan by the City of Fresno is expected to occur in 1995. The programmatic EIR covers broad topics of the Plan, such as growth inducement and cumulative effects. Following certification of the EIR and adoption of the Plan, additional project-specific environmental reviews will be required to identify site-specific issues, such as wetlands and endangered species.

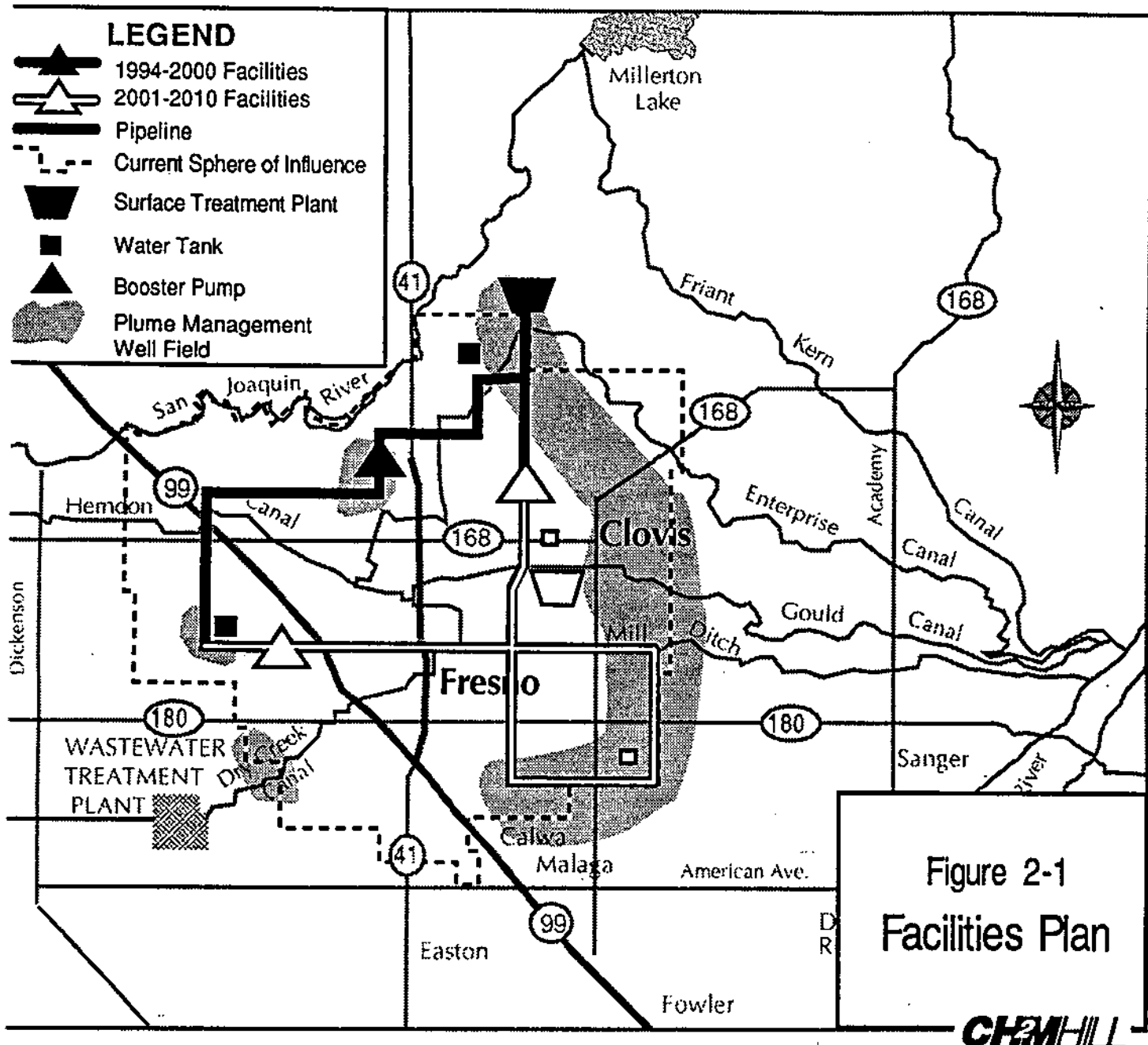
Chapter 2 FACILITIES PLAN

The physical facilities needed to meet drinking water standards and the projected water demands of the FMA are described in this chapter. The staging plan for these facilities through 2010 is shown on Figure 2-1.

The keystone of the preferred plan is the ultimate development of a large-diameter transmission loop surrounding the urban area. When completed, this loop will provide a great deal of reliability and flexibility in transferring potable water (either groundwater or treated surface water) to those areas requiring supplemental supplies. This configuration will facilitate service maintenance in new areas of groundwater contamination that may be discovered in the future. Other significant features include:

- Wellhead treatment to contain groundwater contaminant plume management (plume management wells)
- Retrofit of existing wells for disinfection
- New wells with disinfection
- Use of untreated canal water for landscape irrigation on large turf areas, such as schools
- Conservation program
- Two surface water treatment plants
- Four major storage sites
- Transmission and distribution pipelines
- Groundwater recharge facilities

The general staging of major facility enhancements through the year 2010 is depicted on Figure 2-1. Locations are conceptual only and are subject to refinement during subsequent feasibility studies. For example, pipeline locations should be considered as corridors about 2 miles wide. Subsequent studies utilizing computer modeling analysis will be required to more fully integrate the proposed facility enhancements into the existing systems. These studies will refine layout and operational details and address localized distribution system problems, pipeline replacement requirements, auxiliary power needs etc.



A summary of City of Fresno demand and supply contributions is given in Table 2-1.

Table 2-1 Water Supply Summary (1,000 acre-feet)			
	2000	2010	2050
Demand			
City of Fresno Demand (without conservation)	129	163	321
Supply			
Conservation	8	35	73
Untreated Canal Water for Landscaping	3	17	13
Treated Surface Water			
Northeast Treatment Plant	10	10	25
Southeast Treatment Plant	0	15	25
Subtotal Treated Surface Water	10	25	50
Groundwater			
Plume Management	47	47	47
Existing Wells without Wellhead Treatment	45	38	46
Existing Wells with Wellhead Treatment	11	9	10
New Wells without Wellhead Treatment	4	2	69
New Wells with Wellhead Treatment	1	0	13
Subtotal Groundwater	108	96	185
Total Supply	129	163	321

Urban Intentional Recharge			
Existing Single-Purpose Basins	25	25	25
Flood Control Basins	28	28	107
New Single-Purpose Basins	0	0	0
Groundwater Level Restoration	10	10	10
Total Intentional Recharge	63	63	142

Capital Cost Estimates

Capital cost estimates are summarized in Table 2-2 for Plan facilities required to serve the FMA through the 2010 planning horizon. The primary emphasis for improvements prior to the year 2000 is to alleviate existing and imminent water supply problems resulting from quantity- and quality-impaired groundwater supplies. The 2010 planning horizon corresponds roughly with that of the current Fresno and Fresno County General Plans. Improvements to serve growth beyond 2010 have been identified only to the extent needed to provide a framework for long-range water supply planning policy; no cost estimates are provided for these facilities. Cost estimates for expandable features, such as water treatment plants and storage tanks, are based on expansion to year 2010 requirements. Expansion beyond 2010 requirements will require the acquisition of additional land and the duplication of key facilities.

Cost estimates were prepared in 1994 dollars and escalated to the year of expenditure at an inflation rate of 4 percent. Based on the schedule presented, the total inflated capital cost of the program is \$221 million through the year 2000, and \$217 million between 2001 and 2010. An approximate distribution of these expenditures through the year 2000 is shown in Figure 2-2. Cost estimates are presented in greater detail in Appendix D.

Allocation of Costs

All project capital costs have been divided into two categories:

- Fresno retrofit
- Fresno growth

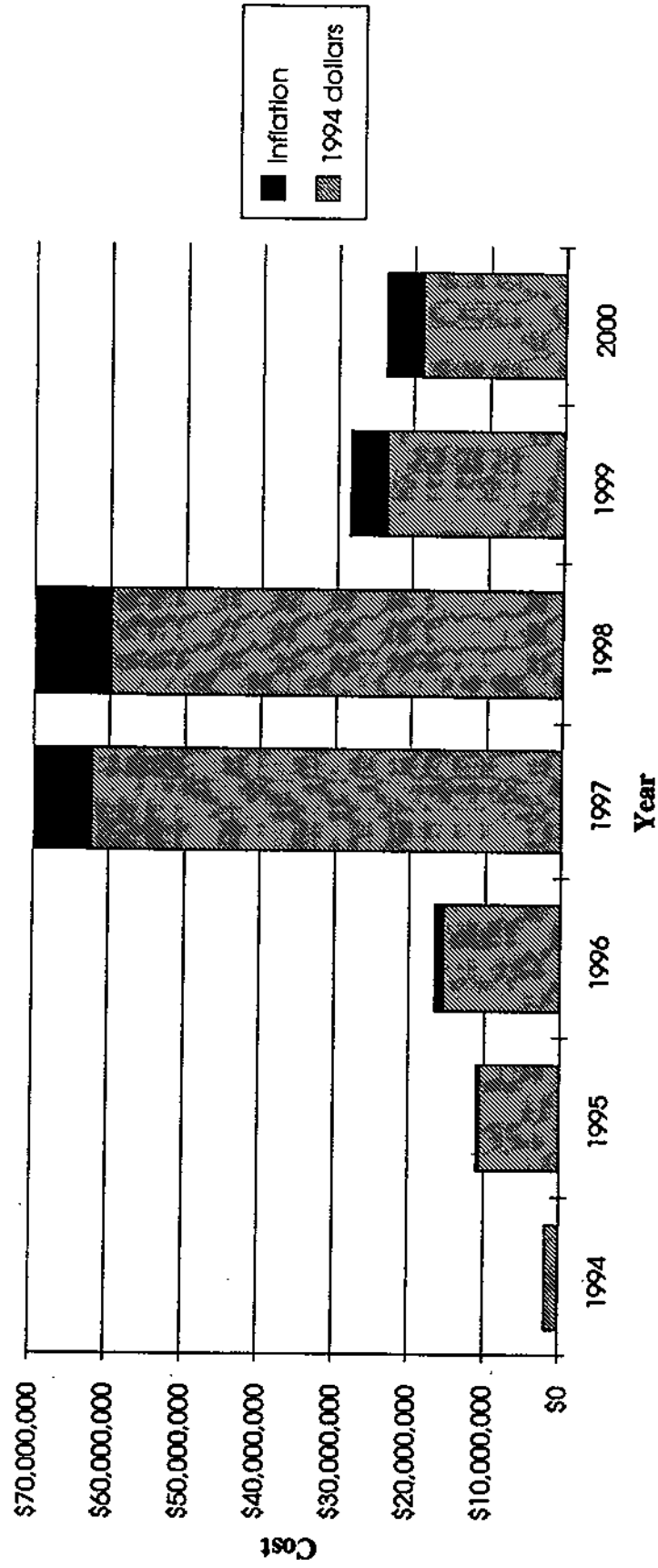
Retrofit facilities are defined as those necessary to provide adequate service to existing (1994) water users supplied by the City of Fresno. Growth facilities are defined as those providing additional capacity to accommodate planned growth under the current General Plan.

Costs were divided among the two categories for the purposes of this report based on the proportional benefit of each facility to each category. Proportional benefit was estimated based on the average year 2010 water supply to each category from a given facility.

Existing (retrofit) demands for each township in Fresno were assumed to be served first by conservation (initial stages of program), then by plume management wells, then by untreated canal water, then by existing wells with and without wellhead treatment, and last by treated surface water. The costs of the initial stages of the conservation program and plume management programs were thus heavily allocated to the retrofit category, and water treatment costs were heavily allocated to the growth category. This sequence is logical because the conservation program helps to restore lost system peaking capacity, and plume management primarily protects existing wells.

Table 2-2 Capital Cost Estimates (\$1,000)				
Water Supply Element	1994 Cost Basis		Inflated Costs	
	1994-2000	2001-2010	1994-2000	2001-2010
Conservation Program	\$29,200	\$7,300	\$34,870	\$9,610
Untreated Canal Water For Landscape Irrigation	\$3,810	\$2,580	\$4,380	\$3,600
Surface Water Treatment Plants	\$31,040	\$36,360	\$35,220	\$56,950
Pipelines	\$37,470	\$49,030	\$42,900	\$78,140
Storage Tanks	\$13,890	\$18,460	\$15,760	\$29,420
Plume Management Wells	\$30,840	\$11,600	\$35,900	\$16,170
Wellhead Treatment Retrofit At Existing Wells	\$6,600	\$7,590	\$8,000	\$10,450
Disinfection Retrofit At Existing Wells	\$28,570	\$0	\$32,700	\$0
New Wells With Wellhead Treatment	\$0	\$1,420	\$0	\$2,170
New Wells Without Wellhead Treatment	\$2,070	\$0	\$2,270	\$0
Flood Control Basin Hookups To FID	\$6,280	\$6,800	\$7,160	\$10,740
Miscellaneous Studies	\$2,070	\$0	\$2,140	\$0
Totals	\$191,840	\$141,140	\$221,390	\$217,250
Grand Totals 1994-2010		\$332,980		\$438,640

Figure 2-2
Capital Cost Estimates



Supplies to serve growth demands were computed by subtracting retrofit supplies from total supplies. The allocation factors used are summarized in Table 2-3. Capital cost allocation is summarized in Figure 2-3 and Table 2-4. A more detailed discussion of cost allocation is provided in Appendix D.

Operation and Maintenance Costs

Operation and maintenance (O&M) costs have been estimated for the recommended project elements. Costs include:

- Energy and chemicals
- Labor and expenses for maintenance of tanks, production, and recharge facilities

O&M costs do not include:

- Office services, billing, general operations staff, and studies unrelated to Plan facilities
- General equipment (trucks, etc.)
- General utility maintenance (pipelines, valves)
- Reserves
- Replacement

These latter items except replacement, are included as a separate line item in the financing plan based on the current Fresno budget (See Chapter 5). Replacement has not been included because rates have been estimated assuming 20-year bonds. The first substantial replacements are not anticipated within the payback period, so new bonds could be sold in 20 years to pay for replacement.

Assumptions used in estimating these costs were presented in Appendix B of the Phase II Report. O&M costs for two points in time are summarized in Table 2-5. A more detailed breakdown of these costs is presented in Appendix D.

Additional Required Facility Studies

A number of engineering studies and designs and environmental studies are needed throughout Plan implementation in order to "fine tune" the Plan elements. Costs for these studies have been included in Tables 2-2 and 2-4. The most critical of these studies are briefly summarized in the following paragraphs. Estimated costs for professional services are given in Appendix D.

Table 2-3
Capital Cost Allocation (%)

	Retrofit^a	Growth^b
Conservation Program	52	48
Untreated Canal Water For Landscape Irrigation	29	71
Surface Water Treatment Plants	26	74
Pipelines	26	74
Storage Tanks	26	74
Plume Management Wells	99	1
Wellhead Treatment Retrofit At Existing Wells	97	3
Disinfection Retrofit At Existing Wells	97	3
New Wells With Wellhead Treatment	0	100
New Wells Without Wellhead Treatment	0	100
Flood Control Basin Hookups To FID	25	75
Miscellaneous Studies	100	0
^a Provides service to existing (1994) water users supplied by the City of Fresno. ^b Provides additional capacity to accommodate planned growth under the existing General Plan.		

Figure 2-3
Capital Cost Allocation

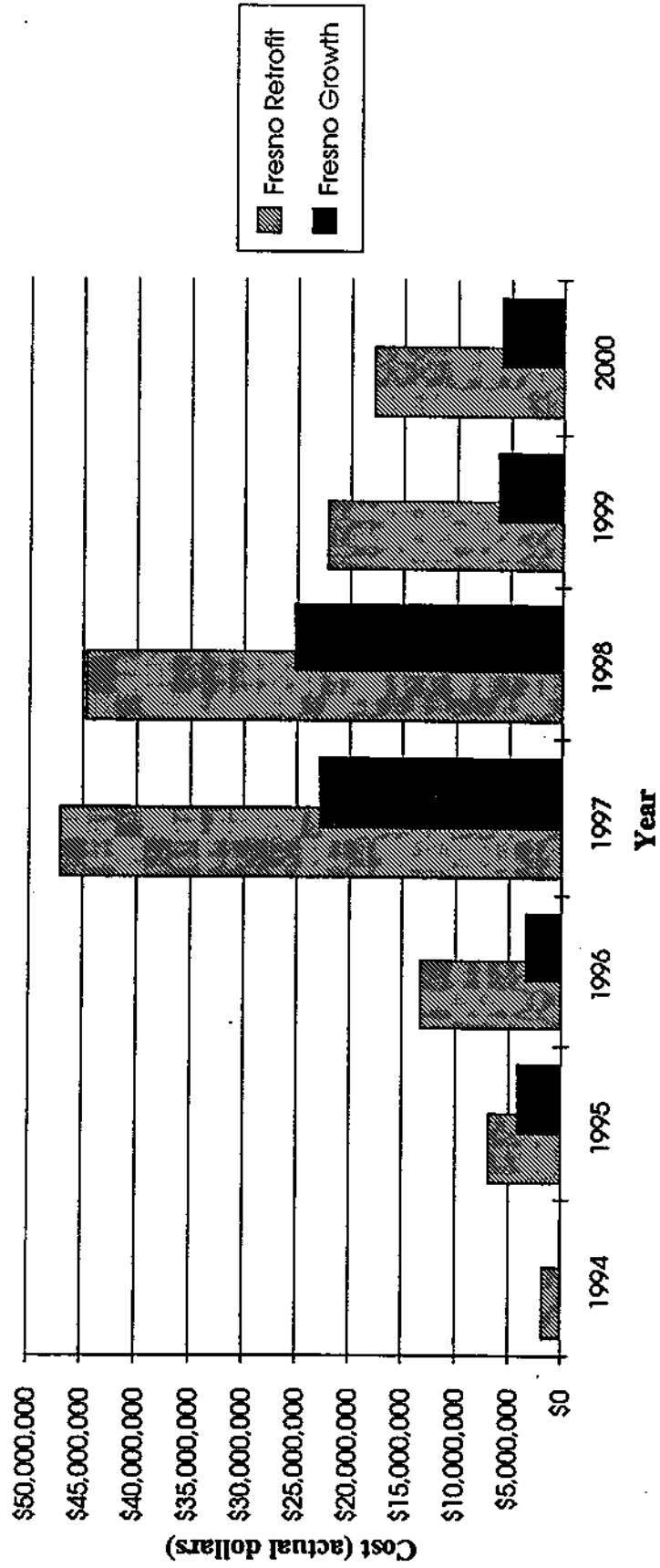


Table 2-4 Capital Cost Allocation (\$1,000)*		
	1994-2000	2001-2010
Retrofit	\$153,000	\$35,000
Growth	68,000	182,000
Total	\$221,000	\$217,000
*Inflated cost basis		

Table 2-5 Operation and Maintenance Costs (\$1,000)*	
2000	2010
\$9,800	\$19,200
*Inflated cost basis	

Water Treatment Plants

Additional investigations should be conducted during the water treatment plant feasibility studies to finalize site selection. The location shown on Figure 2-1 for the northeast treatment plant is the one recommended in the Montgomery report; the location shown for the southeast plant has not been studied in detail. Several factors must be considered to determine a final location for the plants. It would be desirable to site the plants adjacent to single-purpose recharge basins, which could then also serve as emergency sources of raw water in the event of an unscheduled canal shutdown or contamination incident. The growth-inducing aspects of alternative sites should be taken into consideration. The relationship between raw water source, physical location, and ownership and/or operational responsibility must also be considered.

Landscape Irrigation with Untreated Canal Water

The irrigation of turf and landscaped areas, such as parks, school grounds, cemeteries, and golf courses, presently consumes a significant portion of the potable water supply. The Plan proposes that, to the extent practicable, these lands be irrigated with untreated surface water drawn from FID canals. Untreated canal water will be primarily used on turf areas overlying uncontaminated portions of the aquifer, which is essentially the existing urban area. Major turf areas overlying contaminated portions of the aquifer should be watered using pumped untreated groundwater to aid plume management. Water obtained by the city through its current wastewater exchange agreement with FID could be used for this purpose. It will be necessary, in many cases, to construct pipelines to convey water from canals to the properties to be irrigated. For this reason, only those sites within a reasonable distance of a canal could be served in this manner. Systems should be designed to allow the use of city water or private well water as a backup supply. Appropriate isolation should be provided in the delivery and distribution system to prevent the contamination of potable water supplies. The quantities shown in Table 2-1 are based on a reconnaissance-level assessment of landscape and turf areas near FID canals. A feasibility study will be required to fully define the potential of this program.

Plume Management Wells

Facilities employed to manage plumes and prevent further aquifer degradation consist of existing wells retrofitted with wellhead treatment and some strategically located new wells with wellhead treatment. Water will be drawn from within and adjacent to the leading edge of contamination plumes. It will be treated by granular activated carbon or air stripping, depending on the contaminant involved. As may be seen in Table 2-1, water produced by plume management has been assumed to meet drinking water standards and will be used as a potable water supply.

About 39 of the plume management wells are existing wells which will have to be retrofitted. A relatively high percentage of these are on sites too small to accommodate wellhead treatment facilities. It may be possible to pipe water from two or more plume

management wells to a common site for treatment. Also, additional constituents may be present in specific wells, which may warrant additional treatment facilities. A detailed plume management facilities plan is required to resolve these site-specific issues. See Appendix A for further discussion on this topic.

Water Supply Wells

Water supply wells not included in the plume management system represent the largest single component of water supply under the proposed plan. Some of these wells, because they are within areas affected by groundwater contamination, will be retrofitted with wellhead treatment; new wells will have wellhead treatment installed when they are constructed. All wells, including those with wellhead treatment, will be fitted with disinfection facilities. Future studies are required to determine the extent of the need for auxiliary power supply for the wells.

Storage Tanks

Storage tanks are a relatively inexpensive means of providing for peak and fire-flow demands. The tank sizes and locations shown on Figure 2-1 and in Table 2-1 are preliminary; they are subject to refinement in the proposed distribution facilities plan, using computer modeling analysis of the distribution system.

Transmission Pipeline

Approximately 9.5 miles of pipeline will be installed in the northeast area by the year 2000. This will allow water from the northeast treatment plant to be served in the north and northeast portions of the FMA. The 10 miles of pipeline to be installed by the year 2000 in the northwest area will transfer water from the highly productive northwest area to the west (across Highway 99) and Pinedale areas, where contamination has limited the availability of potable groundwater. Feasibility studies, including computer modeling of the distribution system, must be conducted to define the exact pipeline alignments and sizes.

By 2010, pipelines will be in place to convey water from the southeast water treatment plant to the southeast area, where groundwater contamination is expected to remain a problem.

The remainder of the transmission loop, including the required pressure-reducing and booster pump stations, will also be completed by 2010.

Distribution Pipelines

Although not shown on Figure 2-1, a certain amount of distribution pipeline enhancement will probably be needed to effectively tie the transmission pipelines into the local distribution systems. A cost allowance of 10 percent of the transmission pipeline cost has

been included in the cost estimates for this purpose. The details of this requirement should be an outcome of the pipeline feasibility studies.

Groundwater Recharge

The plan provides for enough recharge to balance the FMA groundwater budget plus 10,000 acre-feet per year to gradually restore groundwater levels and provide some drought contingency storage. Groundwater levels should be monitored to allow the adjustment of recharge as conditions permit.

The FMFCD has made projections of flood control basins that could be available for groundwater recharge. These basins, in combination with the existing single-purpose recharge basins will more than meet the recharge needs under the proposed plan.

It may be desirable to provide more single-purpose recharge capacity than this Plan proposes. There is some concern that future regulations could prohibit or restrict the recharge of urban runoff water to groundwater used for domestic supply, and having diverse recharge opportunities would help to avert a systemwide regulatory shutdown.

It may also be desirable to site proposed water treatment plants near single-purpose recharge facilities for operational and emergency forebay storage. If, at some future time, more single-purpose recharge basins are needed, the amount of recharge through the flood control basins could be reduced. A more conservative approach would be to maintain this capacity as backup recharge capability.

Chapter 3

INSTITUTIONAL ALTERNATIVES

The objectives of the institutional plan are to identify the managerial structure and the authority necessary to implement the Fresno Metropolitan Water Resources Management Plan, finance the facilities described in Chapter 2, and operate and maintain the completed improvements. Successful management of both the surface water and groundwater supplies within the FMA will require a comprehensive, integrated management approach. The FMA'S most noteworthy water resources supply problem is contaminated groundwater, which does not stop at a sphere of influence or political boundary. Voter behavior at recent City elections in both Fresno and Clovis have demonstrated that one of the FMA's greatest water resources management problems is political resistance to rate increases necessary to assure a safe, reliable water supply. To be effective and minimize costs, management of the FMA water resources must be uniformly administered and consistently applied.

The cities of Fresno and Clovis have elected to independently implement plans to serve the long term water supply needs of their constituents. Although, independent implementation by the two cities may not be the most cost effective, a coordinated groundwater management program must be implemented to manage the Metropolitan Area's groundwater for the collective benefit of its users. The City of Fresno and the FID have each taken steps to formally establish groundwater management programs for their respective jurisdictions. Coordination of these two management programs will be necessary to assure that the activities of either entity will not offset the benefits derived from the other's program.

Institutional alternatives that could, with varying degrees of effectiveness, meet the Plan's objectives and successfully implement the Fresno Metropolitan Water Resources Management Plan include the following:

- Interagency contracts
- New agency
- Privatization
- Single lead agency

Each of these alternatives is discussed in the following paragraphs. Further elaboration is provided in Appendix C.

Interagency Contracts Alternative

This alternative is an enlargement of the system now used to manage, by mutual agreements, the area's water resources. Numerous two-party agreements exist among the various metropolitan area water agencies. These agreements were described in Appendix D of the Phase I Report and are summarized as follows:

- City of Fresno with FID for delivery of surface water (Kings and San Joaquin Rivers)
- City of Clovis with FID for delivery of surface water (Kings River)
- City of Fresno with USBR for Central Valley Project surface water supply
- FID with USBR for Central Valley Project surface water supply
- City of Fresno with FID for exchange of treated wastewater and surface water
- FID with FMFCD for groundwater recharge in FMFCD ponds
- City of Fresno with FMFCD for groundwater recharge in FMFCD ponds
- City of Clovis with FMFCD for groundwater recharge in FMFCD ponds
- County of Fresno, City of Fresno, City of Clovis, FMFCD, and Alluvial Drainage District with FID for stormwater discharge to FID canals

Many of these agreements will expire within the next few years; some are subject to termination by either party in any year. Each will have to be renewed, with modifications.

In addition to the existing agreements, implementation of the Plan utilizing the interagency contracts alternative should include a new agreement among the cities of Fresno and Clovis, FID, and FMFCD that addresses a coordinated plume management and groundwater management program.

Advantages of Interagency Contracts Alternative

- This alternative maintains the status quo and, from a political standpoint, is probably the easiest to implement and most politically acceptable in the near term.

Disadvantages of Interagency Contracts Alternative

- Because many of the existing contracts expire and must be renegotiated in the next few years, substantial and time consuming technical and legal efforts will be required.
- Contractual arrangements frequently lead to differing interpretation, creating suspicion and seeming lack of control or coordination among the participants.

- Because no single agency is in overall responsible charge, dispute resolution can be difficult, frequently leading to resolution through the judicial process.
- Financing for major multiple-purpose facilities would be difficult to secure.
- A new agreement among the initial participants, with provisions for expansion to include future participants and covering ownership, financing, construction, operation, maintenance, and replacement of joint-use facilities, would be required. This agreement would also need to address coordinated groundwater management so that the activities of one entity would not impact the efforts of others.
- New water related problems such as widespread DBCP contamination require a more coordinated management approach.

New Agency Alternative

A new agency, such as a Municipal Utility District, could be developed by utilizing existing laws or through special legislation. In the former case, existing laws may authorize agency activities that overlap the authorized activities of existing agencies. This could be avoided by creating a new agency through special legislation but the legislative process may be time consuming and unwanted stipulations could be appended to the enabling legislation.

Advantages of New Agency Alternative

- All of the advantages identified for the Single Lead Agency Alternative apply to this alternative.
- A new agency could implement the Plan essentially free from political and policy constraints currently imposed on existing agencies.
- A new agency's focus would be limited to public utility issues.

Disadvantages of New Agency Alternative

- A new layer of government would be created.
- Overlap of authority with existing agencies could occur.
- Plan implementation could be delayed if special legislation or voter approval are required.

Privatization Alternative

Privatization of a governmentally owned and operated facility can be accomplished with varying degrees of private involvement. For municipal utilities such as water supply and distribution, privatization is commonly accomplished in two ways, contract operations or asset sale.

Privatization through contract operations utilizes the least private involvement and occurs when a utility owner, usually a municipality, contracts with a private company to operate and maintain a publically owned facility. No transfer of utility ownership occurs through contract operations, but the owner is contractually relieved of its operations responsibility. The contract for operations defines the standards of performance for the operations and maintenance of the facilities and is cancelable if the contract operator fails to achieve these performance standards. Advantages to the owner include relief of owner's operations responsibilities, operations costs are defined for the term of the contract and can be amended by contract agreement to cover additional costs for compliance with new regulations, and the contract operator is required to guarantee its performance.

Privatization through asset sale utilizes the maximum private involvement and occurs when a utility owner sells publically owned facilities to a non-governmental private or publically traded corporation. Current economic conditions at the local, state and federal levels have created increased interest in privatization through the sale of publicly owned assets. A perception frequently expressed by individuals outside the privatization arena is that the sale of public assets will provide government with a major source of revenue to offset lost or diminished funding sources.

While a utility asset sale will generate cash flow, the magnitude of that cash flow is frequently much less than originally anticipated by the privatization proponents and its use is usually limited to the utility's costs to provide service. Several approaches to establishing asset value are available. On a depreciated value basis, however, much of the existing physical water supply and conveyance facilities would have values near zero simply because of their age. Additionally, the costs associated with the improvements, including future maintenance and operations, necessary to provide a safe dependable, reliable water supply (the Plan) could further diminish the value of the water systems to a qualified and experienced buyer.

Because the PUC regulates the profits of a public utility provider, the Commission is sensitive to testimony from the public sector concerning rate increases. The water customers in the FMA have historically benefited from low water rates and minimal rate increases. Testimony by area residents opposing a rate increase necessary to purchase the existing facilities, pay for required improvements, plus provide a PUC regulated profit is almost a certainty.

For these reasons, privatization should be considered as an alternative for new elements of the plan, only. This would best include surface water treatment plants and plume management facilities.

Notwithstanding the above, the advantages and disadvantages of a privatization alternative for the water system as a whole are:

Advantages of the Privatization Alternative

- Decision-making would be consolidated into a single body.
- Rate setting would be shifted away from elected local officials.

Disadvantages of the Privatization Alternative

- All elements of the water system included in an asset sale privatization would cease to be public property. The privatized system would be operated for profit and might not be managed for the long-term protection of the FMA's water resources.
- Assignment of Fresno's USBR contract, the FID cooperative agreements and the interagency agreements to a new private company could be difficult to secure.

Single Lead Agency Alternative

This alternative is a refinement of the Interagency Contracts Alternative. In this alternative, an existing agency would be legally empowered, through mutual agreement and appropriate contracts, with overall water management authority in the FMA. The City of Fresno is the likely agency to serve as the single lead agency, although FID and the FMFCD could also act in this capacity.

Advantages of Single Lead Agency Alternative

- Decision-making, legal issues, and regulatory compliance could be consolidated into a single agency.
- Interagency agreements could be consolidated.
- Future expansion to include non-participating agencies and newly created agencies could be accomplished by mutual agreement.
- Water resources management decisions could be uniformly applied throughout the FMA.

Disadvantages of Single Lead Agency Alternative

- An agency not serving as lead agency could lose some control over water management decisions affecting its jurisdiction.
- The lead agency could influence home-rule issues of the other agencies, including budgets, rates, schedules, level of service, service area, growth, etc.
- The City of Fresno, whether or not the lead agency, would probably be required to provide the bonding capacity for facility construction financing because its constituency provides the revenue stream for bond repayment.

Recommended Alternative

Selection of a recommended institutional alternative involved a consensus-building process. Alternatives were presented to TAC and meetings were held with the City Managers of both Fresno and Clovis. Personal interviews were conducted with elected officials, water managers, and key community leaders representing urban, agrarian, and environmental groups. Through these meetings and interviews it became apparent that the preferred institutional alternative for implementation of the Fresno Metropolitan Water Resources Management Plan was a new agency. Initially, a Joint Powers Authority composed of the City of Fresno and the City of Clovis was identified as the preferred institutional alternative. With Clovis now pursuing separate implementation, a Municipal Utility District to manage the water resources of the Fresno Metropolitan Area is the recommended institutional alternative. Municipal Utility Districts are governed by the California Public Utilities Code and several are currently operating in the State. The East Bay Municipal Utility District and the Sacramento Municipal Utility District are the better-known such districts.

The Municipal Utility District should be empowered to exercise management authority, either directly or by mutual agreement, relating to the following:

- Surface and groundwater quality
- Potable water quality and quantity
- Construction, operation, maintenance and rehabilitation of works and facilities
- Acquisition, treatment, conveyance and delivery of the municipal and industrial water supply
- Make and enter contracts

- Acquire, construct, manage, maintain and operate buildings, works and improvements
- Employ staff and consultants
- Incur debt, liabilities and obligations
- Issue bonds, notes, warrants or other evidence of indebtedness to finance cost and expenses incidental to agency operations and capital improvement projects
- Establish budgets
- Set rates
- Collect fees for services provided

In addition to water services, the district authority could be expanded to include wastewater collection and treatment, and solid waste management.

Chapter 4 INSTITUTIONAL PLAN

The recommended institutional body for implementation of the Metropolitan Water Resources Management Plan is a Municipal Utility District (MUD) serving the current and future water customers of the City of Fresno. Initially, the MUD would provide full retail water service to the Fresno Metropolitan Area, assuming all of the duties, responsibilities, and contractual obligations of the City's current water division, including billing and collection. This could be expanded to include solid waste management and wastewater collection and treatment either in the initial district formation or at some later date, if so desired. Whether the City retains ownership of its water system and leases it to the MUD, or assigns ownership of the system to the MUD would be an issue to be resolved by the new agency and the City during final implementation of the Plan.

Implementation Task Force

To facilitate plan implementation, a task force should be empowered to resolve issues associated with the final adoption of the Water Resources Management Plan and its implementation. The Implementation Task Force's first tasks, leading to the election of a MUD Board of Directors are:

- Develop public support for creation of the new agency.
- Develop the legal documents necessary to create and empower the MUD.
- Secure adoption of the MUD enabling agreement(s) by the Fresno City Council.

During completion of the initial tasks identified above, the Fresno City Manager or authorized representative should be a full participant on the Implementation Task Force to assure city management support for the MUD and its authority. From a continuity standpoint, it is recommended that the TAC representatives from the FMFCD and FID be members of the Implementation Task Force. Legal, engineering, and financial consultants will also be necessary to develop the authority, legal documents, construction schedules, financing schedules, and plans necessary for Plan implementation. A chairman should be retained to manage the activities and schedule of the Implementation Task Force. The chairman could be one of the appointed members, consultant members, or an individual retained to assume a future management role for the MUD.

Following creation of the MUD and election of its Board of Directors, the Implementation Task Force could assist the MUD Board of Directors with the following tasks, which are critical to the final adoption and implementation of the Water Resources Management Plan:

- Adopt an official name for the MUD.

- Secure staffing, office, and equipment.
- Develop a formula for determining final ownership and related costs associated with acquisition of existing and future facilities and contract services.
- Establish budgets and interim water rates for residential, commercial, industrial, and bulk sale water customers.
- Determine facility implementation phasing and construction schedules.
- Assist with development of the new interagency agreement(s).

The goal of the Implementation Task Force should be to establish a fully functional MUD and secure final Plan adoption and Plan implementation by the MUD by the Spring of 1996.

Major Subjects for New Inter-Agency Agreement

During Phase I of this planning effort, a summary of the existing inter-agency contracts, including water rights, was prepared by the law firm of Neumiller and Beardslee of Stockton, California. This summary was presented as Appendix D in Volume II of the Phase I report.

The existing institutional arrangement among the key metropolitan area water agencies has been accomplished through numerous written and verbal agreements between various combinations of the agencies, with different agreements addressing similar issues. The institutional arrangement recommended by this planning process suggests the formation of a MUD to manage the water resources for the Fresno metropolitan area. The MUD would then enter into a new all-encompassing agreement to address the salient issues covered by previously existing agreements as well as new issues germane to the formation, authority, and function of the MUD.

Many of the existing agreements are obsolete because of changed conditions and others are due to expire in a few years. Some agreements can be terminated in any year by one party to an agreement simply notifying the other(s).

Issues to be addressed in the new agreement are described below.

Non Cancelable Terms

The water supply of a major city should not be jeopardized by the singular action of another party. The new agreement should not be cancelable for the convenience of any party without due cause or concurrence among the contracting parties, and then only following adequate notice and public hearing. To accommodate unforeseen or future events

affecting the viability of the MUD to serve the metropolitan area's water needs, the new agreement must be amendable without voiding its unamended provisions.

MUD Access to Stored Kings River Water

The new agreement should provide MUD access to stored water on the King's River for use by the metropolitan area users. The agreement must clearly define the terms and conditions for such access and provide for some rate differential from the agricultural rate, if required.

Equal Priority

Equal priority for use should be given to both urban and agricultural demands. This will be particularly important in the future, when total urban demands surpass the total agricultural demands of FID.

Surface Water Delivery to Treatment Plant

The agreement must clearly define the terms and conditions, in both schedule and quantity, for the delivery of surface water via FID's canals to the MUD's surface water treatment plants.

Water Quality

The quality of the surface water delivered to the surface water treatment plants must be protected from upstream contamination by outside sources, such as herbicides used for weed control, accidental contaminant spills, and degradation resulting from the urbanization process.

Dry Year Delivery

The agreement should provide that under clearly defined "dry-year" or "drought" conditions, priority for intentional groundwater recharge is secondary to the priority for other uses including agricultural uses and raw water delivery to surface water treatment plants.

Groundwater Management

The agreement should provide for recovery, over time, of the existing groundwater overdraft and for intentional recharge in wet to normal years sufficient to offset recharge curtailed during dry years.

Water Reporting Mechanism

The agreement should include an auditable method for measuring and clearly reporting the annual surface water allocation for urban use, including location, quantity, and associated delivery losses, for all water deliveries made to or on behalf of the MUD by others.

Wastewater Reuse

The current agreement with FID for wastewater exchange expires in 1994. This agreement must be extended or renegotiated prior to expiration. Ownership, timing, exchange rate, place of recovery, and delivery all should be clearly defined in a new agreement.

Facilities Ownership

A clear understanding of the current ownership, operation, and maintenance responsibilities for water transmission and conveyance facilities is needed. The new agreement should also define responsibilities for future facilities.

Rate Setting Policies

Basic policies for rate setting, including rates for service to residential, commercial and industrial users and for bulk water sales to other entities, must be established including an open and well-documented method to support the adoption of future water rates.

USBR Contract

The existing City of Fresno water contract with the United States, including the unfunded operation, maintenance, and capital repayment obligations, should be assigned to the MUD. Necessary terms and conditions for contract renewal and assignment should be developed as a first priority of the MUD.